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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/780,346      | 02/12/2001  | Satoshi Wakasa       | 1921 - 0130P        | 8062             |

2292 7590 03/09/2005

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EXAMINER

DUONG, THANH P

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1764

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/780,346

Applicant(s)

WAKASA ET AL.9

Examiner

Tom P Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 21, 2005 has been entered.

2. Applicants' remarks and amendments filed on November 23, 2004 have been carefully considered. Claims 1 and 6 have been amended. Claims 1-7 are now pending in this application.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peter-Hoblyn et al. (6,361,754) in view of Hunt et al. (5,165,903).

Regarding claims 1 and 6, Peter-Hoblyn et al. discloses ammonia generating apparatus (10, 16, 12, 13, 24) comprising: a urea water introducing part (12);

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a flow passage (12) connected to the urea water introducing part (12) for urea water; a heating means (hot exhaust gases in pipe 14 and heater 13) heats the urea water in said flow passage to produce ammonia therein (ammonia stored in vessel 24). Peter-Hoblyn fails to disclose an air supply line connected to the urea water introducing part. Hunt teaches compressed air (via line 37) connecting with urea inlet line 32 to facilitate deliverance and rapid mixing of the urea solution with the flue gas stream (Col. 5, lines 28-35). Thus, it would have been obvious in view of Hunt to one having ordinary skill to modify the apparatus of Peter-Hoblyn with an air supply line connected with the urea introducing part as taught by Hunt in order to facilitate mixing and deliverance of the urea solution with the flue gas stream. Regarding claim 2, Peter-Hoblyn et al. shows on Figure 2 the hot exhaust gases are flown inside the helical part, which is located inside pipe 14. Regarding claims 3 and 4, Peter-Hoblyn shows the flow passage 12 is formed into helical part with heating means (hot exhaust gas) is provided thru inside of the helical coil and outside of the helical part (area between inner diameter of exhaust pipe 14 and outside coil surface). Regarding claim 5, Peter-Hoblyn shows the heating means surrounds the flow passage.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over the applied references (Peter-Hoblyn '754 in view of Hunt '903) as applied to claim 6 above, and further in view of Lagana et al. (6,093,380). The applied references disclose the heater (Peter-Hoblyn '754) but fail to disclose the specific type of heater as being an electric heater. Lagana teaches it is conventional to provide

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suitable heaters such as electric heater 100 or steam heating coils due to personal preference, availability, and economics consideration (Col. 7, lines 50-65). Thus, it would have been obvious in view of Lagana to one having ordinary skill in the art to utilize an electric heater as taught by Lagana if the cost of electricity is less than steam.

5. Claims 1 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lagana et al. (6,093,380) in view of Hunt et al. '903. Lagana discloses an ammonia generating apparatus (Abstract) comprising: a urea water introducing part (urea pump 97); a flow passage (98) connected to the urea water introducing part (97) for urea water; a heating means or electric heater (100) heats the urea water in said flow passage to produce ammonia (Col. 7, lines 31-45). Lagana fails to disclose an air supply line connected to the urea water introducing part. Hunt teaches compressed air (via line 37) connecting with urea inlet line 32 to facilitate mixing and deliverance of the urea solution with the flue gas stream (Col. 5, lines 28-35). Thus, it would have been obvious in view of Hunt to one having ordinary skill to modify the apparatus of Lagana with an air supply line connected with the urea introducing part as taught by Hunt in order to facilitate deliverance and rapid mixing with the flue gas stream.

### ***Response to Arguments***

Applicant's arguments filed November 23, 2004 have been fully considered but they are not persuasive.

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(1) Examiner agrees that the neither reference (Peter-Hoblyn '754 or Hunt '903) alone provide a flow passage for allowing both urea water and air to flow therethrough. However, the combination of Peter-Hoblyn '754 in view of Hunt '903 provide a flow passage for allowing both urea water and air to flow therethrough as described in paragraph #3, above.

(2) Applicants argue that the objectives of Hunt '903 reference are different than the Peter-Hoblyn '754 and one skilled in the art would not combine Peter-Hoblyn '754 and Hunt '903. Examiner disagrees since it is submitted that both references disclose the importance of using ammonia as a reducing agent to treat NO<sub>x</sub> [See Peter-Hoblyn '754 (Col. 2, lines 15-18; lines 44-55)] and Hunt '903 (Col. 3, lines 26-35)]. The distinction is that Peter-Hoblyn '754 does not show an air supply line connected to the urea introducing part. However, Hunt '903 teaches the air supply line (37) connected to the urea introducing part and discloses the benefits of using the air supply line in connection with the urea introducing part as described in paragraph #3. Note, the introducing of air (inert) to the urea introducing part does not contribute to the conversion of urea solution to ammonia but rather serves as a mixing mechanism and/or facilitating the deliverance of urea solution along the passage.

The rejections under 35 USC 112, first and second paragraph have been withdrawn as stated in the advisory action dated on 12/17/04.

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**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom P Duong whose telephone number is (571) 272-2794. The examiner can normally be reached on 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Duong  
February 11, 2005

TD



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